

1981

## Piezometer logs

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# LOG OF BORING



PROJECT: S82-48 SOILS INVESTIGATION  
Levee Project - Reach E-2  
Winona, Mn.

BORING: E-1

LOCATION:

DATE: 9-21-82

SCALE: 1" = 4'

(See Report and Standard Plates for evaluation and descriptive terminology.)

Elev.	Depth	ASTM D2487 Symbol	Description of Materials (ASTM D2488)	BPF	WL	Tests or Notes
	1.5	CL-ML	CLAYEY SILT, dark brown, moist. (Fill) <i>improvement</i>			
		SP	SAND, fine grained, light brown, moist. (Fill)			
	6.0			22		
	7.0	CL	SILTY CLAY, dark brown, slightly *	7		* organic, moist. (Fine Alluvium)
			Water level not encountered with 7' of hollow-stem auger in ground.			
			Water level not encountered to cave-in depth of 4.1' immediately after withdrawal of auger.			



# LOG OF BORING



PROJECT:

S82-48 SOILS INVESTIGATION  
Levee Project - Reach E-2  
Winona, Mn.

BORING: E-2

LOCATION:

DATE: 9-21-82

SCALE: 1" = 4'

Elev.	Depth	ASTM D2487 Symbol	Description of Materials (ASTM D2488)	BPF	WL	Tests or Notes
	1.5	ML	SANDY SILT, drak brown, moist. (Topsoil)			
	7.5	ML	CLAYEY SILT to SANDY SILT, organic pieces wood debris, gray, wet. (Fill)	7		
	12.0	ML	CLAYEY SILT, slightly organic, black, wet. (Fill)	4		
	14.5	SP-SM	SAND, slightly silty, fine to medium grained, gray, waterbear- ing. (Alluvium)	9		
			Water level down 10.3' with 14.5' of hollow-stem aguer in ground.  Water level down 9.3' immediately after removal of auger.			

(See Report and Standard Plates for evaluation and descriptive terminology.)



# LOG OF BORING



PROJECT: S82-48 SOILS INVESTIGATION  
Levee Project - Reach E-2  
Winona, Mn.

BORING: E-3

LOCATION:

DATE: 9-21-82

SCALE: 1" = 4'

Elev.	Depth	ASTM D2487 Symbol	Description of Materials (ASTM D2488)	BPF	WL	Tests or Notes
	2.5	ML	SILT, gray, moist. (Fill)			
	7.0	ML	CLAYEY SILT, slightly organic, gray mottled with red, wet. (Fine Alluvium)	4		
	10.5	SC	SANDY CLAY, slightly organic, dark brown, wet. (Alluvium)	3		
	14.0	SP	SAND, fine to medium grained, gray, waterbearing. (Alluvium)	11		
			Water level down 9.4' with 14' of hollow-stem auger in ground.  Water level not encountered to cave-in depth of 6.8' immediately after withdrawal of auger.			

(See Report and Standard Plates for evaluation and descriptive terminology.)



# LOG OF BORING



PROJECT: S82-48 SOILS INVESTIGATION  
Levee Project - Reach E-2  
Winona, Mn.

BORING: E-4

LOCATION:

DATE: 9-21-82

SCALE: 1" = 4'

Elev.	Depth	ASTM D2487 Symbol	Description of Materials (ASTM D2488)	BPF	WL	Tests or Notes
	2.0	ML	SILT, brown, moist. (Topsoil)			
	8.0	ML	CLAYEY SILT, slightly organic, gray mottled with red, wet. (Fine Alluvium)	4		
	14.0	SP	SAND, fine to medium grained, gray, waterbearing. (Alluvium)	9		
			Water level down 8.8' with 14' of hollow-stem auger in ground.	8		
			Water level not encountered to cave-in depth of 6.8' immediately after withdrawal of auger.			

(See Report and Standard Plates for evaluation and descriptive terminology.)



# LOG OF BORING



PROJECT: S82-48 SOILS INVESTIGATION  
Levee Project - Reach E-2  
Winona, Mn.

BORING: E-5

LOCATION:

DATE: 9-21-82

SCALE: 1" = 4'

(See Report and Standard Plates for evaluation and descriptive terminology.)

Elev.	Depth	ASTM D2487 Symbol	Description of Materials (ASTM D2488)	BPF	WL	Tests or Notes
	1.5	CL	SILTY CLAY, dark brown, moist. (Fill)			
		SP	SAND, fine to medium grained, brown, wet. (Fill)			
	6.5			9		
		SP	SAND, fine to medium grained, some fine to medium grained gravel grayish brown, waterbearing.  (Alluvium)			
				9		
	13.0			8		
			Water level down 6.4' with 3' of hollow-stem auger in ground.  Water level not encountered to cave-in depth of 3.5' immediately after withdrawal of auger.			



ELEVATIONS OF THE  
TOP OF CMP LID ON  
RIVERBEND PIEZOMETERS

	<u>ELEVATION</u>
E-1	651.64
E-2	655.08
E-3	653.74
E-4	652.40
E-5	649.35
E-6	654.46
E-7	657.51
E-8	666.65

Robert J. Bollant  
Dir of P.W



R/W MARKER DISC  
SCALE: FULL SIZE

PIEZOMETER MARKER DISC  
SCALE: FULL SIZE

LETTERING  
OF POST ONLY)  
ONG  
MED  
RD TO  
ST

R/W MARKERS (TYP)  
REACH E-1  
(100' O.C. 10' FROM TOP  
OF SWALE)

PIEZOMETER  
MARKERS

DRAINAGE  
SWALE

BERM

INDUSTRIAL  
PARK LEVEE

EROSION  
CONTROL STRUCTURE

CHANNEL MODIFICATION

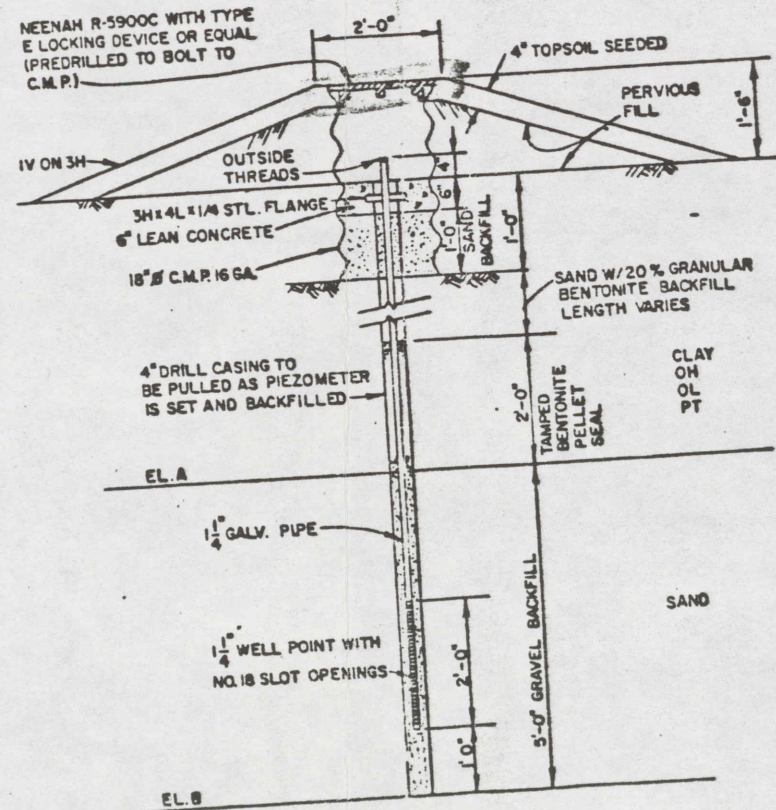
HIGHWAY 61

BURNS VALLEY CREEK  
CHANNEL MODIFICATION

REACH E-2

TECHNICAL  
SCHOOL

PIEZOMETER DATA REACH E-1				
PIEZOMETER NO.	APPROXIMATE CENTER LINE STATION	APPROXIMATE ELEVATION		
		SURFACE	A	B
E-1	10+00E	647.0	644.0	639.0
E-2	25+00E	651.0	641.0	636.0
E-3	25+00E	651.0	641.0	636.0
E-4	25+00E	651.0	641.0	636.0
E-5	21+00E	649.0	643.0	638.0
E-6	8+00	653.0	643.0	638.0
E-7	8+45	653.4	643.0	638.0
E-8	8+60	554.5	643.0	638.0



PIEZOMETER DETAILS  
SCALE: 2"=1'-0"

PIEZOMETER AND R/W MARKER LOCATION  
200' 100' 0 200' 400'

AS-BUILT AS OF COMPLETION DATE JULY 1982		DATE	APPROVAL
DEPARTMENT OF THE ARMY ST. PAUL DISTRICT, CORPS OF ENGINEERS ST. PAUL, MINNESOTA			
DESIGNED BY M.G.R. G.V.F.		FLOOD CONTROL MISSISSIPPI RIVER WINONA, MINNESOTA	
DRAWN BY J.M.J.		REACH E-1	
CHECKED BY M.G.R. G.V.F.		PIEZOMETER AND R/W MARKER LOCATION AND DETAILS	
SUBMITTED BY		DATE: FEBRUARY 1981	
SCALE AS SHOWN		DRAWING NUMBER M-L6-10/42	
SHEET 2 OF 29			



data from Bob Bollant  
June 19, 1990

Prozometer

ground level

E1

2

3

4

5

6

7

8

650.6

653.9

652.3

650.9

648.0

655.3

same

664.6

657.5 ?